

Further Notes on Communities of Blue-Green Algae

HELEN FOOT BUELL

In two previous papers¹ the author described a fresh-water community of blue-green algae collected in Minneapolis, Minnesota. This community develops in bottom ooze and later floats to the water surface. It is a globular, gelatinous mass, disagreeable in odor, varying in color from greenish-black to black or reddish-black. The community consists of an outer layer composed of species of Oscillatoriaceae, some having a violet color, and surrounding an oozy inner portion containing pseudo-vacuolate, unicellular Cyanophyceae. As far as I know there have been no other published reports of such communities.

During the summer of 1938, however, collections were made² in Lake Itasca, Itasca Park, Minnesota, of communities which are practically identical with those previously described. They appeared likewise to be developing in similar situations—bays of the lake 10 to 20 feet deep, offering some protection against water movement, and having the bottom composed of a deep deposit of fine black mud. These communities were from 2 to 5 cm. in diameter, somewhat smaller than those found earlier at Minneapolis, which were from 2 to 8 cm. and occasionally 12 cm.

There appears, however, to be a slight dissimilarity in the temperature conditions under which the communities develop. As far as was determined, the Minneapolis communities never developed at mean temperatures lower than 21° C., and those having a reddish-black color, dominated by violet-colored Cyanophyceae, developed only at temperatures 2 to 3° higher. The Lake Itasca communities were reddish-black in color and were composed mainly of violet-colored Cyanophyceae. The mean temperature for the period beginning 10 days prior to their first observance and ending the last day of their observance (i.e., from July 28 to August 16) was 22° C., indicating development at slightly lower temperatures than

¹ Buell, H. F. A community of blue-green algae in a Minnesota pond. *Ecology* 19: 224-232. 1938.

———. The taxonomy of a community of blue-green algae in a Minnesota pond. *Bull. Torrey Bot. Club* 65: 377-396. 1938.

² By Dr. Murray F. Buell and students at the Biological Station of the University of Minnesota at Itasca Park, Minn.

in Minneapolis, and suggesting the possibility that some other factor, such as light, may also be critical.

Dr. Samuel G. Eddy of the Department of Zoology, University of Minnesota, states that he has frequently observed macroscopically similar communities in various other parts of Minnesota.

DEPARTMENT OF BOTANY,
NORTH CAROLINA STATE COLLEGE,
RALEIGH, N. C.

Algal Communities in Tully Lake

GEORGE T. HASTINGS

During a number of summers spent at Tully Lake, Onondaga and Cortland Counties, N. Y., communities similar to those described by Mrs. Buell were observed in August and notes and drawings made. The lake has a maximum depth of about thirty feet and has a soft white marl bottom. These floating colonies always appeared in the deeper parts of the lake. Above the surface they appeared as hemispheres 2 to 3 cm. across, below water extended a skirt-like mass 7 to 10 cm. deep and about as much across. These masses were made up chiefly of a species of *Spirulina*, the individual trichomes about 2 mm. long, with some species of *Oscillatoria*, small colonies of *Microcystis*, various diatoms and protozoa.
